

WHAT IS CLAIMED IS:

1. A method for fabricating an electrode for lithium secondary battery, comprising the steps of:

5 roughening a surface of a metallic foil to be used as a current collector through wet-etching; and

depositing a thin film composed of active material capable of lithium storage and release, on the roughened surface of the metallic foil.

10 2. The method for fabricating the electrode for lithium secondary battery according to claim 1, wherein surface roughness Ra of said surface of the metallic foil is made to be 100 nm or more through said wet-etching.

15 3. The method for fabricating the electrode for lithium secondary battery according to claim 1, wherein said wet-etching is the etching using a hydrochloric acid based etchant.

20 4. The method for fabricating the electrode for lithium secondary battery according to claim 1, wherein said metallic foil is a nickel foil.

25 5. The method for fabricating the electrode for lithium secondary battery according to claim 4, wherein said nickel foil is a rolled nickel foil.

6. The method for fabricating the electrode for lithium secondary battery according to claim 1, wherein an interlayer is provided on the roughened surface of said

metallic foil and said thin film is provided on the interlayer.

7. The method for fabricating the electrode for lithium secondary battery according to claim 6, wherein
5 said interlayer contains a component to be diffused into said thin film.

8. The method for fabricating the electrode for lithium secondary battery according to claim 6, wherein said interlayer is a copper layer.

10 9. The method for fabricating the electrode for lithium secondary battery according to claim 1, wherein said thin film is any one of an amorphous silicon thin film, a microcrystalline silicon thin film, an amorphous germanium thin film, a microcrystalline germanium thin film, 15 an amorphous silicon-germanium alloy thin film, and a microcrystalline silicon-germanium alloy thin film.

10. A method for fabricating an electrode for lithium secondary battery, comprising the steps of:

roughening a surface of a metallic foil to be used as
20 a current collector by spraying particles on the surface of the metallic foil to collide the particles with the surface; and

depositing a thin film composed of active material capable of lithium storage and release, on the roughened
25 surface of the metallic foil.

11. The method for fabricating the electrode for lithium secondary battery according to claim 10, wherein said metallic foil is made of copper, iron, nickel, tantalum, molybdenum, or tungsten, or an alloy containing 5 at least one of these metals.

12. The method for fabricating the electrode for lithium secondary battery according to claim 10, wherein the maximum diameter of said particles is between 10 μm and 150 μm .

10 13. The method for fabricating the electrode for lithium secondary battery according to claim 10, wherein said thin film is any one of an amorphous silicon thin film, a microcrystalline silicon thin film, an amorphous germanium thin film, a microcrystalline germanium thin film, 15 an amorphous silicon-germanium alloy thin film, and a microcrystalline silicon-germanium alloy thin film.